Philips Medical Systems

NEWSLETTER **Service**

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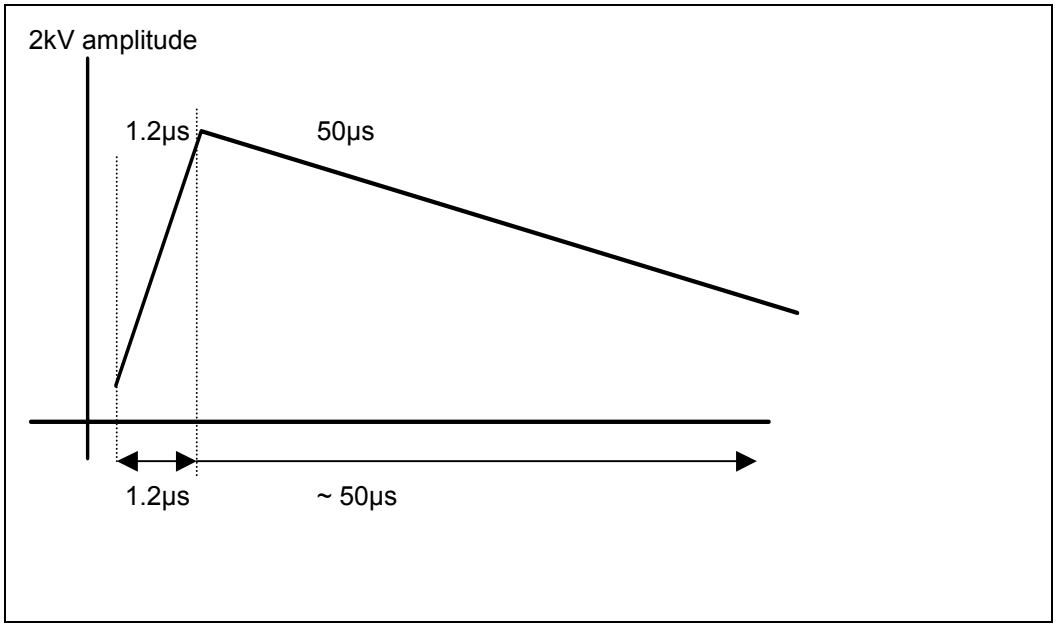
XRG

High-speed / dual-speed rotor control for OPIMUS RAD / RF / C
Trip-off of earth leakage current breaker caused by the varistor of the rectifier filter PCB

The varistor (SIOV EY200 R13) between N and PE has a protective function.
The varistor is intended to take up any surge which might cause the destruction of the rotor control unit.

When a certain threshold value is exceeded the earth-leakage current breaker (FI switch) is released; both components (varistor and FI) are part of the safety concept.

The specification of a varistor refers to:
- Energy storage 33Joule for 2ms
- Continuous load 1W
- Surges may occur during switching operation or lightning. A surge is defined as follows:



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The current of a varistor is 1 mA at rated voltage, with increasing voltage the current of the varistor rises according to the e-function.
Example of type S20K60 nominal data:
V_{RMS} = 60V V_{DC} =85V
Current 1mA ~ 60-70V, ~40mA at 120V.

In case there is an error which causes a current > 20mA in the varistor (caused by the high voltage between N and PE) the FI switch must respond immediately to interrupt the phases and N. In this way rotor control unit and generator are protected against destruction.

Failures of the rotor control unit are caused by mains conditions which are insufficient. If there are such problems with regard to N-PE it is necessary to install a mains adaptation transformer 9890 000 0230x.
This transformer makes sure that the necessary mains conditions for the internal supply of the generator and the supply of external consumers are properly provided.

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